# Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Katzmarzyk PT, Martin CK, Newton RL Jr, et al. Weight loss in underserved patients — a cluster-randomized trial. N Engl J Med 2020;383:909-18. DOI: 10.1056/NEJMoa2007448

**Supplementary Appendix**

**Weight Loss in Underserved Patients -- A Cluster-Randomized Trial**

**Table of Contents**

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**Description of Statistical Model**

We employed the following linear mixed effects model and its assumptions in the analysis of our primary analytical model:

$$Y_{hijk} = \alpha + intervention_h + time_i + (intervention \times time)_{hi} + clinic_j + race_{jk} + sex_{jk} + age_{jk} + \varepsilon_{hijk}$$

Here $Y_{hijk}$ represents percent change from baseline weight for treatment *h*, where *h*=1, 2, at time *i*, *i* equals 1, 2, 3, 4, (months 6, 12, 18, and 24), for subject *k*, *k*=1…, $n_j$, *j*=1, 2…,18 (clinics); $\alpha$ is the model intercept, $intervention_h$ is the main effect for intervention *h*, and *h* equals 1 for lifestyle intervention and 2 for usual care; $time_i$ is the time effect; $(intervention \times time)_{hi}$ is the interaction between treatment and time; $race_{jk}, sex_{jk}, age_{jk}$ are fixed effects of patient level covariates for patient *k* in clinic *j*. In view of the significant time by treatment interaction, the analysis of treatment differences was carried out with comparisons between treatments at each time point, thus there were four comparisons of interests, one at each time point. These comparisons were made by calculating 95% confidence intervals on the differences in mean change in weight between the two treatments. Invoking this model, we used SAS proc mixed procedure to calculate model-based estimates of least squares means and standard errors for changes in outcomes across time. The parameters in the model of our cluster randomized design were estimated by finding model-based predicted values for each observation in the analytic data. Estimates of parameter in the model were chosen as those that minimized the sum of the square deviations between observed values and model-based predicted values. Model-based predicted values were used to calculate means, standard errors and other summary statistics relevant to the statistical analysis. The slice option was used to restrict comparisons to treatments at 6, 12, 18, and 24 months. These options also provided comparisons of differences between means, standard deviations of differences and confidence intervals of differences. The standard error for a given comparison had degrees of freedom equal to sum of number of clinics in each treatment minus one (2*(9-1)=16) times the number of time points minus one (4-1=3). Thus, the degree of freedom for the t statistic used in calculating the confidence interval had 16*3=48 degrees of freedom. The confidence interval was calculated as difference in means between treatments ± standard error of the difference between the treatments multiplied by critical t values. The random effect for $clinic_j$ is assumed

to be $N(0, \sigma^2_{clinics})$, the random clinic effect at time *i* is assumed to be $N(0, \sigma^2_{clinics(i)})$, and $\varepsilon_{hijk}$ is the residual error for the *k*-th patient in the *j*-th clinic at the *i*-th time that is assumed to be $N(0, \sigma^2_{\varepsilon})$. We further assume that outcome assessments made at different clinics are mutually independent, but assessments made on different subjects within the same clinic maybe correlated with intraclass correlation. The intraclass correlation (ICC) was calculated as $\frac{\sigma^2_{clinics}}{(\sigma^2_{clinics} + \sigma^2_{\varepsilon})}$ . For percent weight loss at 24 months, the calculated ICC was 0.14.

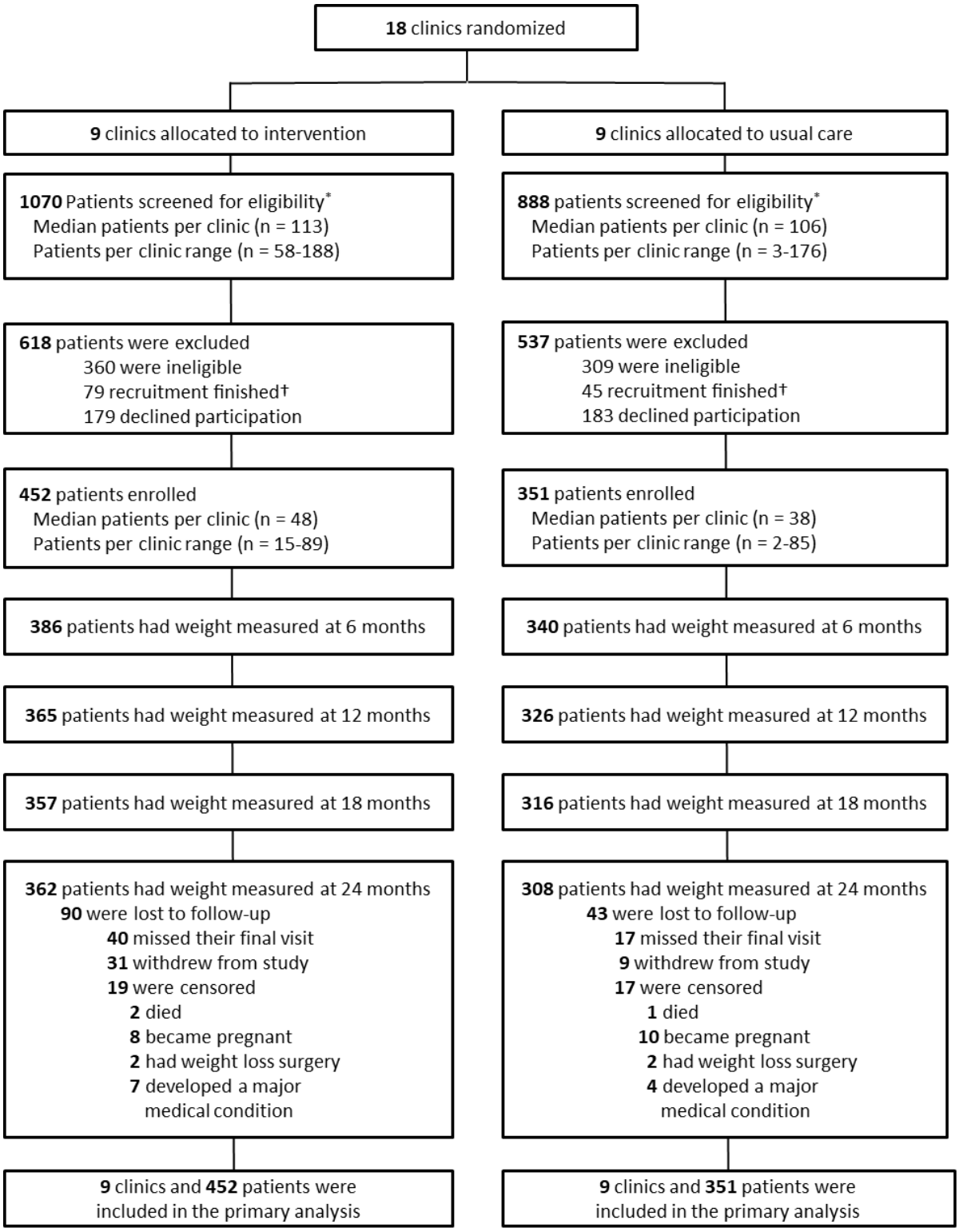
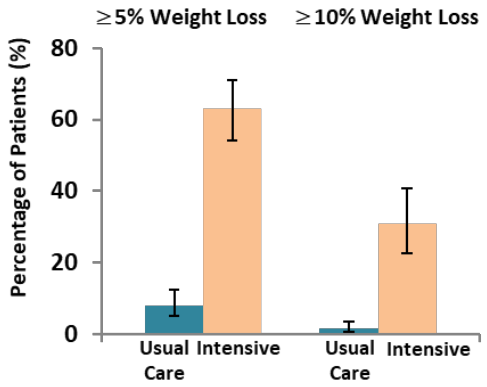



**Figure S1. Flow of Patients Through the PROPEL Trial.**

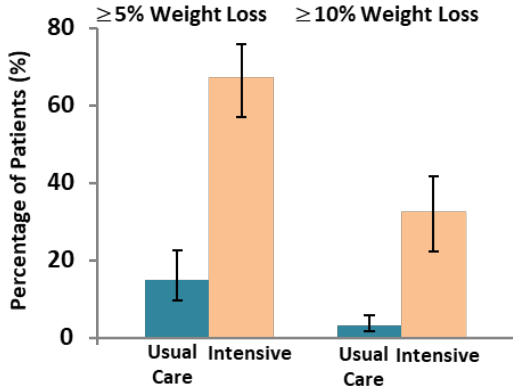
*an additional 102 patients were ineligible due to not having a primary care practitioner at a participating clinic and were not allocated to a study arm;

†124 patients were not enrolled as their visits were pending when recruitment ended.

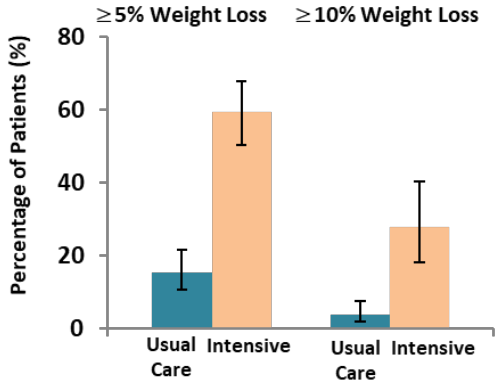
A) 6 Months




B) 12 Months




C) 18 Months




D) 24 Months

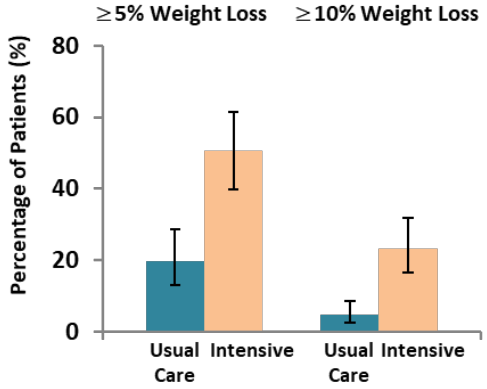



**Figure S2. Percentage of Patients Achieving ≥5% and ≥10% Weight Loss at A) 6 Months, B) 12 Months, C) 18 Months, and D) 24 Months.**
Error bars represent 95% Confidence Intervals.

**Table S1.** Propel Intervention Session Topics.[1]

| Week | Session | Session Topic |
|---|---|---|
| 1 | 1 | Welcome to PROPEL |
| 2 | 2 | Weight Path, Plan for Eating, and Toolbox Tools |
| 3 | 3 | Weight Path Review and Energy Balance |
| 4 | 4 | How's it going? (Phone Session) |
| 5 | 5 | Let’s Move More |
| 6 | 6 | Food Labels and Cutting Portions |
| 7 | 7 | Swapping Fruits and Vegetables |
| 8 | 8 | How's it going? (Phone Session) |
| 9 | 9 | Healthy Protein Choices |
| 10 | 10 | Healthy Carbs |
| 11 | 11 | Fast Food |
| 12 | 12 | How's it going? (Phone Session) |
| 13 | 13 | Asking for Support & Eating Less During the Holidays & Special Events |
| 14 | 14 | Healthy Snacking |
| 15 | 15 | Eating foods that fill you up |
| 16 | 16 | How's it going? (Phone Session) |
| 17 | 17 | Dealing with Stress |
| 18 | 18 | Skip the Extra Calories |
| 19 | 19 | Flavoring your food |
| 20 | 20 | How's it going? (Phone Session) |
| 21 | 21 | Preparing for Monthly Meetings |
| 22 | 22 | How's it going? |
| 24 | 23 | Grocery shopping without breaking the bank |
| 28 | 24 | Stay Motivated (Phone Session) |
| 32 | 25 | Setting and meeting your goals |
| 36 | 26 | Getting the most of your time (Phone Session) |
| 40 | 27 | Easy Food Swaps |
| 44 | 28 | Mindfulness (Phone Session) |
| 48 | 29 | Losing weight and keeping it off |
| 52 | 30 | Reward yourself for meeting your goals (Phone Session) |
| 56 | 31 | Change the way you eat |
| 60 | 32 | Find time to keep moving! (Phone Session) |
| 64 | 33 | Stay on track at family events |
| 68 | 34 | Can anyone help over here? (Phone Session) |
| 72 | 35 | Making cues work for you |
| 76 | 36 | I've got to have it! (Phone Session) |
| 80 | 37 | Avoid Added Sugar |
| 84 | 38 | Challenge yourself (Phone Session) |
| 88 | 39 | Avoid High Calorie, Unhealthy Foods |
| 92 | 40 | Goal setting review (Phone Session) |
| 96 | 41 | Have a plan for slip ups |
| 100 | 42 | Ending strong (Phone Session) |
| 104 | 43 | Congratulations! |

**Table S2.** Unadjusted and Adjusted Differences between Usual Care and the Intensive Group for Changes in Weight Loss Variables over Two Years.

| Variable | Unadjusted | Adjusted[1] | Adjusted[2] | Adjusted[3] |
|---|---|---|---|---|
| Change in Body Weight (%) | | | | |
| At 6 months | -6.75 (-8.11, -5.39) | -6.86 (-8.05, -5.68) | -6.87 (-8.04, -5.69) | -6.68 (-8.08, -5.28) |
| At 12 months | -6.02 (-7.51, -4.54) | -6.16 (-7.47, -4.85) | -6.17 (-7.47, -4.86) | -5.98 (-7.49, -4.47) |
| At 18 months | -5.08 (-6.60, -3.57) | -5.22 (-6.57, -3.88) | -5.23 (-6.57, -3.89) | -5.04 (-6.58, -3.50) |
| At 24 months | -4.37 (-5.95, -2.80) | -4.51 (-5.93, -3.10) | -4.52 (-5.92, -3.11) | -4.33 (-5.93, -2.73) |
| Change in Body Weight (kg) | | | | |
| At 6 months | -6.83 (-8.30, -5.36) | -6.98 (-8.26, -5.71) | -7.00 (-8.24, -5.77) | -6.87 (-8.41, -5.32) |
| At 12 months | -6.05 (-7.63, -4.47) | -6.23 (-7.63, -4.83) | -6.25 (-7.61, -4.89) | -6.11 (-7.76, -4.46) |
| At 18 months | -5.07 (-6.69, -3.46) | -5.26 (-6.69, -3.82) | -5.27 (-6.67, -3.87) | -5.14 (-6.82, -3.46) |
| At 24 months | -4.33 (-6.00, -2.65) | -4.51 (-6.01, -3.02) | -4.53 (-5.99, -3.06) | -4.39 (-6.13, -2.66) |
| Change in Waist Circumference (cm) | | | | |
| At 6 months | -5.73 (-6.83, -4.63) | -5.85 (-7.04, -4.66) | -5.86 (-7.03, -4.69) | -6.00 (-7.39, -4.60) |
| At 12 months | -5.83 (-7.05, -4.60) | -5.95 (-7.25, -4.65) | -5.96 (-7.25, -4.68) | -6.10 (-7.60, -4.61) |
| At 18 months | -5.41 (-6.65, -4.16) | -5.54 (-6.86, -4.22) | -5.55 (-6.85, -4.24) | -5.69 (-7.20, -4.18) |
| At 24 months | -5.00 (-6.29, -3.71) | -5.13 (-6.50, -3.77) | -5.14 (-6.49, -3.79) | -5.28 (-6.83, -3.74) |

Values are means (95% Confidence Intervals).

[1]Adjusted for age, race and sex

[2]Adjusted for age, race, sex and baseline weight

[3]Adjusted for age, race, sex, and clinic level variables (clinic size, %Black, %Medicaid)

**Table S3.** Differences between Usual Care and the Intensive Group for Changes in Weight Loss Variables over Two Years in Black and Other Races.

| Variable | Black | Other |
|---|---|---|
| Change in Body Weight (%) | | |
| At 6 months | -6.45 (-7.66, -5.23) | -7.81 (-9.16, -6.46) |
| At 12 months | -5.64 (-7.00, -4.28) | -7.56 (-9.38, -5.75) |
| At 18 months | -4.78 (-6.18, -3.38) | -6.30 (-8.23, -4.37) |
| At 24 months | -4.16 (-5.61, -2.71) | -5.33 (-7.57, -3.10) |
| Change in Body Weight (kg) | | |
| At 6 months | -6.58 (-7.78, -5.38) | -7.84 (-9.53, -6.15) |
| At 12 months | -5.74 (-7.08, -4.40) | -7.54 (-9.64, -5.45) |
| At 18 months | -4.83 (-6.22, -3.44) | -6.31 (-8.51, -4.11) |
| At 24 months | -4.20 (-5.65, -2.75) | -5.23 (-7.65, -2.80) |
| Change in Waist Circumference (cm) | | |
| At 6 months | -5.07 (-6.50, -3.65) | -7.37 (-8.80, -5.93) |
| At 12 months | -5.26 (-6.82, -3.71) | -7.28 (-9.05, -5.51) |
| At 18 months | -5.15 (-6.71, -3.59) | -6.32 (-8.18, -4.45) |
| At 24 months | -4.55 (-6.13, -2.98) | -6.23 (-8.34, -4.12) |

Values are means (95% Confidence Intervals).

All models included age and sex as covariates.

**Table S4.** Differences between Usual Care and the Intensive Group for Changes in Weight Loss Variables over Two Years in Women and Men.

| Variable | Women | Men |
|---|---|---|
| Change in Body Weight (%) | | |
| At 6 months | -6.83 (-7.94, -5.72) | -7.47 (-10.13, -4.81) |
| At 12 months | -6.32 (-7.59, -5.05) | -6.01 (-9.03, -2.99) |
| At 18 months | -5.22 (-6.53, -3.91) | -6.09 (-9.21, -2.98) |
| At 24 months | -4.83 (-6.21, -3.45) | -3.85 (-7.38, -0.31) |
| Change in Body Weight (kg) | | |
| At 6 months | -6.71 (-7.78, -5.64) | -9.00 (-12.44, -5.56) |
| At 12 months | -6.17 (-7.41, -4.94) | -7.25 (-11.02, -3.48) |
| At 18 months | -5.04 (-6.32, -3.76) | -7.31 (-11.16, -3.47) |
| At 24 months | -4.71 (-6.06, -3.36) | -4.51 (-8.70, -0.32) |
| Change in Waist Circumference (cm) | | |
| At 6 months | -5.58 (-6.69, -4.47) | -7.43 (-10.55, -4.31) |
| At 12 months | -6.03 (-7.28, -4.78) | -5.49 (-8.96, -2.01) |
| At 18 months | -5.58 (-6.85, -4.31) | -5.42 (-8.91, -1.94) |
| At 24 months | -5.28 (-6.59, -3.96) | -4.51 (-8.30, -0.72) |

Values are means (95% Confidence Intervals).

All models included age and race as covariates.

**Table S5.** Differences between Usual Care and the Intensive Group for Changes in Weight Loss Variables over Two Years in Younger, Middle, and Older Adults.*

| Variable | Younger | Middle | Older |
|---|---|---|---|
| Change in Body Weight (%) | | | |
| At 6 months | -5.55 (-7.12, -3.99) | -7.17 (-8.51, -5.83) | -8.03 (-9.48, -6.58) |
| At 12 months | -5.21 (-7.18, -3.25) | -6.48 (-7.98, -4.98) | -7.18 (-8.94, -5.41) |
| At 18 months | -4.44 (-6.47, -2.41) | -5.69 (-7.23, -4.15) | -6.13 (-7.97, -4.29) |
| At 24 months | -4.33 (-6.60, -2.05) | -4.90 (-6.67, -3.13) | -4.89 (-6.78, -3.00) |
| Change in Body Weight (kg) | | | |
| At 6 months | -5.77 (-7.49, -4.06) | -7.36 (-8.74, -5.97) | -8.01 (-9.48, -6.54) |
| At 12 months | -5.36 (-7.42, -3.30) | -6.60 (-8.15, -5.06) | -7.13 (-8.92, -5.35) |
| At 18 months | -4.55 (-6.71, -2.40) | -5.73 (-7.32, -4.14) | -6.10 (-7.96, -4.24) |
| At 24 months | -4.39 (-6.75, -2.02) | -4.83 (-6.63, -3.03) | -4.89 (-6.80, -2.97) |
| Change in Waist Circumference (cm) | | | |
| At 6 months | -4.49 (-6.07, -2.91) | -6.43 (-7.99, -4.88) | -6.60 (-8.43, -4.77) |
| At 12 months | -4.72 (-6.74, -2.71) | -6.62 (-8.27, -4.97) | -6.70 (-8.75, -4.66) |
| At 18 months | -3.70 (-5.79, -1.60) | -6.82 (-8.45, -5.20) | -6.26 (-8.34, -4.18) |
| At 24 months | -4.06 (-6.27, -1.85) | -4.99 (-6.75, -3.23) | -6.26 (-8.39, -4.12) |

Values are means (95% Confidence Intervals).

*Younger = 21-42 y; middle = 43-56 y; older = 57-74 y.

All models included sex and race as covariates.

**Table S6.** 24-Month Changes in Weight Loss Variables in the Intensive Group among Patients who Received <80% and ≥80% of Session Materials.

| Variable | <80% of Materials | ≥80% of Materials |
|---|---|---|
| Change in Body Weight (%) | -1.93 (-3.81, -0.06) | -7.07 (-8.58, -5.56) |
| Change in Body Weight (kg) | -2.00 (-3.90, -0.11) | -7.39 (-8.92, -5.87) |
| Change in Waist Circumference (cm) | -1.87 (-3.71, -9.02) | -6.13 (-7.61, -4.65) |

Values are means (95% Confidence Intervals).

Results are from a linear mixed model including age, sex, race and baseline weight as covariates.

**Table S7.** Changes in Cardiovascular Disease Risk Factors* over Two Years.

| Variable | Usual Care Group | Intensive Group | Difference |
|---|---|---|---|
| Change in Systolic Blood Pressure (mmHg) | | | |
| At 6 months | 1.35 (-1.33, 4.03) | -0.01 (-2.57, 2.54) | -1.36 (-4.82, 2.09) |
| At 12 months | 2.11 (-0.63, 4.85) | 0.52 (-2.09, 3.13) | -1.59 (-5.13, 1.95) |
| At 18 months | 1.08 (-1.73, 3.89) | -0.08 (-2.76, 2.59) | -1.16 (-4.81, 2.48) |
| At 24 months | 0.41 (-2.43, 3.26) | 1.94 (-0.75, 4.63) | 1.53 (-2.15, 5.21) |
| Change in Diastolic Blood Pressure (mmHg) | | | |
| At 6 months | 0.23 (-1.56, 2.03) | -0.88 (-2.59, 0.82) | -1.12 (-3.44, 1.20) |
| At 12 months | 0.13 (-1.70, 1.97) | -1.28 (-3.02, 0.46) | -1.41 (-3.79, 0.97) |
| At 18 months | -0.84 (-2.70, 1.02) | -1.83 (-3.60, -0.06) | -0.99 (-3.41, 1.43) |
| At 24 months | -0.64 (-2.53, 1.24) | -0.61 (-2.39, 1.17) | 0.03 (-2.41, 2.48) |
| Change in Total Cholesterol (mg/dL) | | | |
| At 12 months | 0.58 (-3.09, 4.26) | 3.07 (-0.79, 6.91) | 2.48 (-2.10, 7.05) |
| At 24 months | -1.26 (-5.38, 2.87) | 4.64 (0.45, 8.82) | 5.89 (0.68, 11.10) |
| Change in High-Density Lipoprotein Cholesterol (mg/dL) | | | |
| At 12 months | 0.50 (-0.81, 1.81) | 4.54 (3.21, 5.87) | 4.04 (2.41, 5.68) |
| At 24 months | -0.44 (-1.81, 0.94) | 4.16 (2.78, 5.54) | 4.60 (2.88, 6.32) |
| Change in Low-Density Lipoprotein Cholesterol (mg/dL) | | | |
| At 12 months | 0.81 (-2.74, 4.36) | 1.58 (-2.19, 5.34) | 0.77 (-3.69, 5.23) |
| At 24 months | -0.17 (-4.17, 3.83) | 3.22 (-0.85, 7.29) | 3.39 (-1.69, 8.47) |
| Change in Triglycerides (mg/dL) | | | |
| At 12 months | -1.56 (-12.40, 9.29) | -9.45 (-20.39, 1.49) | -7.89 (-21.62, 5.84) |
| At 24 months | -5.58 (-16.39, 5.23) | -11.23 (-22.02, -0.44) | -5.65 (-19.23, 7.92) |

| | | | |
|---|---|---|---|
| Change in Glucose (mg/dL) | | | |
| At 12 months | 2.30 (-1.70, 6.29) | -4.84 (-9.04, -0.64) | -7.14 (-12.12, -2.16) |
| At 24 months | -0.33 (-4.61, 3.94) | -1.25 (-5.65, 3.15) | -0.91 (-6.28, 4.45) |

Values are means (95% Confidence Intervals).

*Blood pressure was measured at each study visit using an automated Omron device,[2] while blood lipids and glucose were measured at baseline, and months 12 and 24 using a Cholestech LDX point-of-care device.[3,4]

All models included age, sex and race as covariates.

**Table S8.** Changes in Patient-Reported Outcomes* over Two Years.

| Variable | Usual Care Group | Intensive Group | Difference |
|---|---|---|---|
| Change in PROMIS-29 Physical Function | | | |
| At 6 months | -0.17 (-1.12, 0.78) | 1.96 (1.02, 2.90) | 2.13 (0.94, 3.32) |
| At 12 months | -0.33 (-1.30, 0.65) | 1.23 (0.26, 2.19) | 1.55 (0.32, 2.78) |
| At 24 months | -0.39 (-1.39, 0.62) | 0.82 (-0.16, 1.79) | 1.20 (-0.06, 2.46) |
| Change in PROMIS-29 Anxiety | | | |
| At 6 months | 0.39 (-0.96, 1.74) | -1.51 (-2.84, -0.19) | -1.90 (-3.61, -0.19) |
| At 12 months | -0.29 (-1.62, 1.04) | -0.89 (-2.20, 0.41) | -0.60 (-2.28, 1.07) |
| At 24 months | -0.53 (-1.95, 0.89) | -0.92 (-2.29, 0.46) | -0.39 (-2.18. 1.41) |
| Change in PROMIS-29 Depression | | | |
| At 6 months | 0.73 (-0.19, 1.65) | -0.06 (-1.00, 0.87) | -0.79 (-1.93, 0.35) |
| At 12 months | 0.80 (-0.13, 1.74) | 0.29 (-0.67, 1.24) | -0.52 (-1.69, 0.66) |
| At 24 months | 0.64 (-0.34, 1.63) | -0.18 (-1.17, 0.81) | -0.82 (-2.07, 0.42) |
| Change in PROMIS-29 Fatigue | | | |
| At 6 months | -0.98 (-2.13, 0.17) | -3.49 (-4.64, -2.33) | -2.51 (-3.94, -1.07) |
| At 12 months | -1.23 (-2.43, -0.04) | -2.60 (-3.80, -1.40) | -1.36 (-2.87, 0.15) |
| At 24 months | -1.03 (-2.28, 0.22) | -2.82 (-4.06, -1.59) | -1.80 (-3.37, -0.22) |
| Change in PROMIS-29 Sleep Disturbance | | | |
| At 6 months | 0.23 (-0.93, 1.39) | -2.01 (-3.15, -0.87) | -2.24 (-3.69, -0.78) |
| At 12 months | -0.02 (-1.25, 1.21) | -0.88 (-2.08, 0.32) | -0.86 (-2.42, 0.70) |
| At 24 months | -0.35 (-1.59, 0.89) | -1.25 (-2.45, -0.05) | -0.90 (-2.47, 0.67) |

| | | | |
|---|---|---|---|
| Change in PROMIS-29 Social Functioning | | | |
| At 6 months | 0.05 (-0.87, 0.98) | 2.14 (1.19, 3.08) | 2.08 (0.95, 3.22) |
| At 12 months | 0.46 (-0.52, 1.45) | 1.97 (0.96, 2.97) | 1.50 (0.27, 2.74) |
| At 24 months | 0.15 (-0.87, 1.17) | 1.57 (0.55, 2.60) | 1.42 (0.14, 2.71) |
| Change in PROMIS-29 Pain Interference | | | |
| At 6 months | -0.04 (-1.07, 0.98) | -1.58 (-2.63, -0.53) | -1.54 (-2.80, -0.28) |
| At 12 months | 0.46 (-0.63, 1.55) | -0.95 (-2.06, 0.16) | -1.41 (-2.78, -0.05) |
| At 24 months | 0.21 (-0.95. 1.37) | -1.06 (-2.22, 0.10) | -1.27 (-2.72, 0.19) |
| Change in PROMIS-29 Pain Intensity | | | |
| At 6 months | 0.02 (-0.28, 0.31) | -0.26 (-0.56, 0.05) | -0.27 (-0.64, 0.10) |
| At 12 months | 0.07 (-0.25, 0.40) | -0.01 (-0.33, 0.32) | -0.08 (-0.49, 0.33) |
| At 24 months | 0.21 (-0.12, 0.53) | -0.02 (-0.35, 0.30) | -0.23 (-0.64, 0.18) |
| Change in Weight-related Quality of Life (IWQOL-L Total Score) | | | |
| At 6 months | 3.02 (1.14, 4.90) | 10.55 (8.69, 12.41) | 7.53 (5.18, 9.88) |
| At 12 months | 3.56 (1.61, 5.50) | 11.14 (9.23, 13.06) | 7.59 (5.15, 10.03) |
| At 24 months | 4.36 (2.34, 6.39) | 11.02 (9.04, 13.00) | 6.66 (4.10, 9.21) |
| Change in IWQOL-L Physical Function | | | |
| At 6 months | 2.71 (-0.03, 5.45) | 13.35 (10.70, 16.00) | 10.64 (7.17, 14.10) |
| At 12 months | 3.20 (0.44, 5.96) | 13.59 (10.92, 16.27) | 10.39 (6.89, 13.89) |
| At 24 months | 4.11 (1.24, 6.97) | 12.31 (9.55, 15.06) | 8.20 (4.56, 11.84) |
| Change in IWQOL-L Self Esteem | | | |
| At 6 months | 4.69 (2.20, 7.17) | 12.20 (9.67, 14.72) | 7.51 (4.44, 10.58) |
| At 12 months | 5.86 (3.21, 8.50) | 13.74 (11.07, 16.40) | 7.88 (4.57, 11.19) |
| At 24 months | 7.62 (4.88, 10.36) | 14.39 (11.66, 17.12) | 6.77 (3.32, 10.21) |

| | | | |
|---|---|---|---|
| Change in IWQOL-L Sexual Life | | | |
| At 6 months | 2.02 (-1.05, 5.08) | 12.19 (9.05, 15.33) | 10.18 (6.37, 13.98) |
| At 12 months | 3.19 (0.12, 6.27) | 12.20 (9.04, 15.36) | 9.01 (5.18, 12.84) |
| At 24 months | 4.49 (1.18, 7.80) | 14.32 (11.00, 17.65) | 9.83 (5.68, 13.99) |
| Change in IWQOL-L Public Distress | | | |
| At 6 months | 2.42 (-0.12, 4.96) | 4.76 (2.29, 7.22) | 2.33 (-0.88, 5.54) |
| At 12 months | 2.39 (-0.19, 4.96) | 5.95 (3.46, 8.44) | 3.56 (0.31, 6.82) |
| At 24 months | 2.41 (-0.20, 5.02) | 5.38 (2.86, 7.89) | 2.97 (-0.34, 6.27) |
| Change in IWQOL-L Work/Daily Activity | | | |
| At 6 months | 2.69 (0.57, 4.82) | 5.41 (3.29, 7.53) | 2.72 (0.07, 5.37) |
| At 12 months | 1.83 (-0.38, 4.03) | 5.67 (3.48, 7.86) | 3.84 (1.08, 6.60) |
| At 24 months | 1.47 (-0.83, 3.76) | 5.48 (3.22, 7.75) | 4.02 (1.12, 6.91) |

Values are means (95% Confidence Intervals).

*The PROMIS-29[5,6] and the Impact of Weight on Quality of Life Lite (IWQOL-L)[7,8] questionnaires were administered at baseline and at months 6, 12 and 24.[1]

All models included age, sex and race as covariates.

**Table S9.** Cardiovascular Disease Risk Factors at Baseline.

| | Usual Care Group | Intensive Group | Total |
|---|---|---|---|
| Systolic blood pressure (mmHg) | 122.6 ± 16.5 | 123.1 ± 16.3 | 122.9 ± 16.4 |
| Diastolic blood pressure (mmHg) | 78.4 ± 10.6 | 79.7 ± 10.6 | 79.1 ± 10.6 |
| Total cholesterol (mg/dL) | 180.0 ± 36.7 | 179.6 ± 37.5 | 179.8 ± 37.1 |
| HDL-cholesterol (mg/dL) | 47.7 ± 14.4 | 50.5 ± 14.4 | 49.3 ± 14.4 |
| LDL-cholesterol (mg/dL) | 106.7 ± 31.5 | 105.7 ± 32.8 | 106.2 ± 32.2 |
| Triglycerides (mg/dL) | 131.6 ± 69.4 | 125.2 ± 72.8 | 128.0 ± 71.3 |
| Glucose (mg/dL) | 112.3 ± 40.2 | 106.4 ± 31.9 | 109.0 ± 35.8 |

Values are means ± standard deviations.

**Table S10.** Patient-Reported Outcomes at Baseline.

| | Usual Care Group | Intensive Group | Total |
|---|---|---|---|
| Health-Related Quality of Life (PROMIS)* | | | |
| Physical Functioning | 48.1 ± 8.1 | 48.9 ± 7.9 | 48.6 ± 8.0 |
| Anxiety | 52.2 ± 10.1 | 51.7 ± 9.7 | 51.9 ± 9.9 |
| Depression | 48.1 ± 8.7 | 47.0 ± 8.5 | 47.5 ± 8.6 |
| Fatigue | 50.9 ± 10.4 | 49.4 ± 9.8 | 50.1 ± 10.1 |
| Sleep Disturbance | 51.5 ± 9.5 | 50.2 ± 9.2 | 50.7 ± 9.4 |
| Social Functioning | 54.3 ± 9.1 | 55.2 ± 8.9 | 54.8 ± 9.0 |
| Pain Interference | 52.5 ± 9.4 | 51.5 ± 9.7 | 51.9 ± 9.6 |
| Pain Intensity** | 3.2 ± 2.7 | 2.9 ± 2.7 | 3.0 ± 2.7 |
| Weight-related Quality of Life (IWQOL)† | | | |
| Total Score | 75.3 ± 18.3 | 72.8 ± 19.5 | 73.9 ± 19.0 |
| Physical function | 71.3 ± 20.9 | 68.4 ± 22.3 | 69.7 ± 21.7 |
| Self-esteem | 64.9 ± 28.1 | 62.2 ± 27.6 | 63.4 ± 27.8 |
| Sexual Life | 79.0 ± 28.6 | 72.8 ± 31.1 | 75.5 ± 30.1 |
| Public distress | 87.3 ± 20.7 | 86.5 ± 20.0 | 86.9 ± 20.3 |
| Work/Daily Activities | 86.3 ± 18.7 | 85.7 ± 19.4 | 85.9 ± 19.1 |

Values are means ± standard deviations.

* PROMIS-29[5,6] questionnaire

**Scale of 0-10 in which higher reflects more pain.

†Impact of Weight on Quality of Life Lite (IWQOL-L)[7,8] questionnaire.

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